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Roshni B.

POA

Arrived @ 8:30am to facility entrance

Security called Sarah - Env. Engineer

Accompanied by MDEQ

Shane Nixon, Cathryn Owens

8:45am - Cont Room

Maurzen Barry - Process Systems Manager 20yrs

Sara Kaltun - Environmental Manager 2yr

POA history - Lumbermill 1897

Paper mill 1927

changed names

POA since 1999 -

About 325 employees, 6:30 - 2:30

2:30 - 10:30

10:30 - 6:30

247 (4 rotating crews)

annual outage 5-6 days in October

publicly traded company

curvated medium - middle layer & curvated

100,000 tons/yr - 450,000 tons

1250 tons/daily

cust: POA has plants trade

outside cust

comp: GP, International Paper

complaints - noise? - coal conveyor?

MDEQ: older complaints, multiple industries

← N

(2)

(23) buildng - cap

Block # : wood blocks, round wood, lumber & chips

(1) chips (2) recycled old corrugated boxes (ROC)  
tans of wood - 1300 tans/day  
assume 50% moisture  
45% - round wood  
55% - chips

8ft stem - weight of each log? "lots"  
fines & bark

Recycled: 550 tans/day average

round wood → wood room - debark/chip  
chip → whole tree  
Saw mill residuals → blend them

(33) rotating drum - debark  
feeds the chipper

feed into debarking is manual  
automatic

chip transport - chip silo cyclones - 2 chip  
visual inspection  
better  
no age  
phenol

(3) chip washing → hot process water - whitewater once every 2 months  
paper wash  
reuse  
pines, no chem. additives  
reclaimed water  
as needed ← always through cyclone

7/9 pulp mill digester → cooker - continuous digester - chips enter  
8/18 silo, feed screw conveyors, set cook time, conveyed through  
With screws 353°F

9/10 beater room  
pulp is blown to blow tank → 2 stage drum wope  
4hr retention  
volume capacity -  
series lin

10/10 beater room  
stock blending and refining - 3 diff inputs  
Virgin fiber and - recy  
broke - paper wash

based on 90 - run-ability & how paper

paper machines - 3

#2 - (17) ~1951

maintenance repairs

#1 - (11) 1937

annual outage

#3 - (28) ~1957 → Kraft machine prior to 20 yrs ago

knives stock

headbox

dryer cans  
28 - #1 → 148'

spread it uniformly

average #1: gravity  
rotary wire #2: water

⇒ 29% solid

52 - #2  
58 - #3

pressing

2 stage presses

⇒ 40%

rotary between rollers

dryers

steam from powerhouse ⇒ 90% solids ⇒ final

steam heaters

powerhouse - combination of coal/nat gas/bio gas

Mill Bob manager

Peretin - 13 yrs

→ based on cost

→ coal finish stock in oct

Roger Smith died March 9 in March.

Mawreen: don't believe it's required

opacity range monitor continuous

3 boilers gas - private

Boiler 1 - coal use up by oct

Boiler 2 - coal/gas/bio gas since March

Boiler 4A - nat gas/bio gas primarily

no opacity monitor cent. max

mandatory bio gas prod - 140 cfm

Serials center don't sample every

"winder"

final product → reel - full width & length - 2 rolls ⇒ winder's customer  
2 widths out of each rolls - 1 roll across

transfer through crane to winder

from winder conveyed to truck - chipping storage

powerhouse (3) - (5)

(55) - (56) biogas reactors →

process water + anaerobic bacteria → methane + CO<sub>2</sub>  
"white water" granular sludge

→ all enclosed - scrubber H<sub>2</sub>S limit  
50 ppm

biogas flare

freq - annual H<sub>2</sub>S test - 3rd party

maintenance - low maint. as needed

REACTOR 1, 2, 3, 4 - only run 2 now  
2011 not enough feed source for (3) & (4)

Boiler 1 & 2 0.5" - 9" wc & same come for both  
sulfur - incinerating - outside party does it for each  
2010 - last shipment of coal

stack tests May 22-23, 2013

most recent: RATA - NO<sub>x</sub> CEMS ← Boiler 4A

last 5 yrs - PM, CO testing on Boiler 2, 4A

1 Nat'l Gas - 4A

2009 testing?

(41) no issue w/ CEMS & CEMS report

after cooker, before washer

filtrate is sent to recovery process

concentrate filtrate - long tube Vertical (LTV) force circular  
evaporator (FC)

conc. solids → 50% solids w/ gray black pepper → sprayed  
into copeland - reactor pellets regenerate sodium bicarb pellets

5

recovery process: multiple controls <

venturi scrubber - diff pressure ~~38"~~ 38" WC

RTO - black liquor spraying - greater than 1600°F

chem. recycled

↳ 2010 stack test

Na Carb - from washing process

storage - cycle 3 weeks on / week off

Sodium carb pellet silo - bayhouse

Fly Ash silo - bayhouse

soda Ash silo - bayhouse

primary clarifier onsite

2 aerator basins at Secondary - Strawn Hill

Chris Bryant - Biogas Superintendent

Tar @ 10am

wood chip conveyor

log conveyor - in the open air, grass

DMPs under conveyors

tumble - bark loss, tumblers at 1 by 1

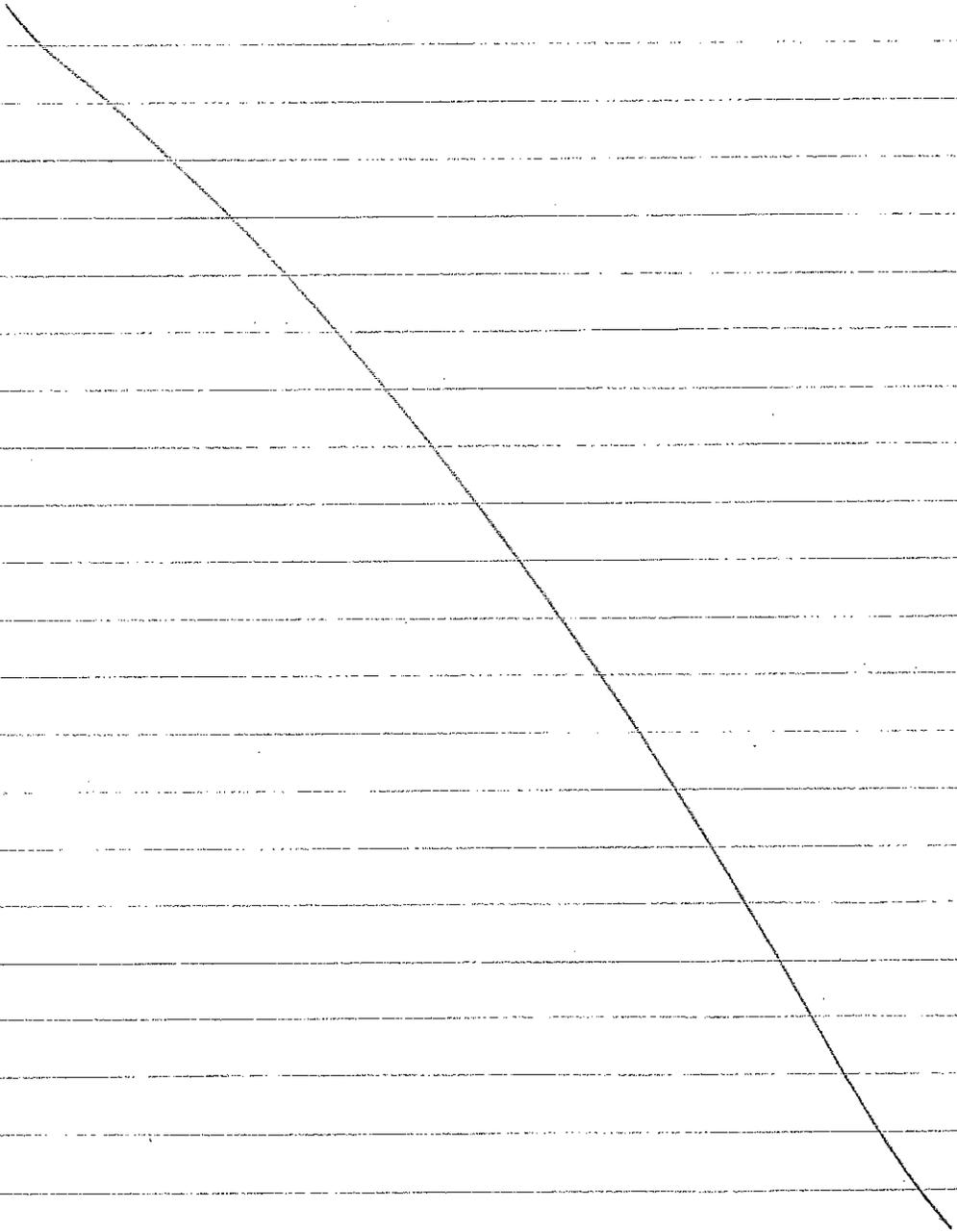
chipper - blue hermie log

screen - catches overs - fines to separate

wood chips

don't store in silos - stored outside

chip conveyer bulky



[ digester line  
chip hopper  
delibrator  
blow tower  
LVHT - 2 cylinders

Machine # 2  
read box feeds

refiners - rotating plates - breaks & down

refiner near #1 - gravity, vacuum  
send out feed

finish reel  
reactor inlet stop  
Jerry Nowicki  
Reading and Power  
Superint

Jerry - Superintendent

~~0.0109" we~~

0.0126" we

soda can 6" range  
inst 1.7"

reactor inlet (0-7" we)  
5" alarm

fly ash - pressure switch - 7" - shuts down

↳ doesn't have a transmitter  
are not virtually empty

scrubber: 25.1" - hot running (50-60" - 38 is magic number)  
must be 60% or more

RFO temp - dump @ 600°F

baghouse for boiler 1 & 2 = 4" we (2.4" - 8.4" mic) next

NOx 133.8 ppm - boiler 2 0.35% range: 0.5-9" we

max 1500  
with baghouse 57.6 ppm - boiler  
0.09 10/mmbTU

1.590 we

Brandt - biojane Super  
WN bottom  
2 reactors down

egg smell

1313 fpm  
0  
1262 fpm

11:05 return to conf room

① Stack Test - Copeland Reactor Sept 28, 2010  
PM: 0.02 lb/1000 lb → temp ?  
VOC DE: 93%  
H<sub>2</sub>S: < 1 ppm  
1600° - lowest run & set up milk

② Stack Test - PM - Boiler & Boiler  
Sept 14, 2011  
PM: 0.04 lb/1000 lbs (limit: 0.10)  
0.045 lb/MMBTU (limit: 0.051)  
↳ Test 2 - Sept 14, 2011 exceedance of 0.06

③ Stack Test - Boiler 4A  
April 7, 2009  
CO: 1.0 ppm, 0.05 lb/hr  
PM: 0.72 mg, 0.029 lb/hr  
VOC: 1.0 ppm, 0.09 lb/hr

Natl Gas  
④ Emission Test - Non-Comb Gas Closed Vent System: May 22, 2013  
NTH - non-condensable gas closed vent system (CGCS) - MACT Support  
leak detem

⇒ "cone did not exceed the background levels in the allocated testing area."

⑤ Emission Test - Non-Comb Gas Closed Vent System May 29, June 5, 2013  
CGCS condenser & reactor & evaporator → boiler

(6) Exceedance during Sept 14-15, 2011 LDAR Insp  
May 2012 - replaced gaskets & flanges  
2 place: NCG-R-7 (cyclone) leak of 1500 ppm

(7) Test Report  
LV/HC (LVHC) Collection System Dec 2, 2010 test

(8) Letter Feb 3, 2010  
35 flanges or valves

(9) RATA May 22-23, July 1, 2013

Boiler #	Gas	RA (%)	Part 60 (%)
Boiler 2	O <sub>2</sub>	10.15	20
	NO <sub>x</sub>	2.81	20
Boiler 4A	O <sub>2</sub>	7.26	20
	NO <sub>x</sub>	31	20

(10) RATA May 30-31, 2012

2	O <sub>2</sub>	10.0
	NO <sub>x</sub>	4.5
4A	O <sub>2</sub>	1.2
	NO <sub>x</sub>	2.7

(11) Sept 13-16, 2011

2	O <sub>2</sub>	1.7%
	NO <sub>x</sub>	11.4 (lb/mmBTU)
4A	O <sub>2</sub>	2.2 (70)
	NO <sub>x</sub>	5.8 (lb/mmBTU)

(11) RATA Nov 30-Dec 1, 2010

8.5
NO <sub>x</sub> 1.4
4A O <sub>2</sub> 3.8
NO <sub>x</sub> 10.1

(12) RATA Feb 2, 2010

3.3	3.8
0.5	0.1

(13) Emissions Test - Biogas Flare May 23, 2011  
H<sub>2</sub>S : 0.54 ppm

(14) May 31, 2017 Biogas Flare  
H<sub>2</sub>S : 0.05 ppm

(15) May 3, 2011 Biogas Flare  
H<sub>2</sub>S : 0.39 ppm

① Daily Reports

→ Fuels

Boiler flow (scf/hr)

" " Heat (mmBTU/hr)

Total Heat (mmBTU/hr)

Gas Flow (scf/hr)

Coal Flow (tons/hr)

Gas Heat

Coal Heat (mmBTU/hr)

→ Opacity Report

→ Emission Report

NO<sub>x</sub> (ppm)

O<sub>2</sub> (%)

Fd Factor

NO<sub>x</sub> limit

NO<sub>x</sub>

→ Alarms

→ Calibration

② Daily Pulp Mill BH InSP - 2010

SA BH

VE?

dP?

pellet BH

- not running for many

SH: 0-12  
pellet: 06"

12:05 pm

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